

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

16 JUN 2005

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(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 47/64117WO	FOR FURTHER ACTION	
	See Form PCT/IPEA/416	
International application No. PCT/GB2004/003324	International filing date (day/month/year) 02.08.2004	Priority date (day/month/year) 31.07.2003
International Patent Classification (IPC) or national classification and IPC A61B5/0428		
Applicant DEL MAR REYNOLDS MEDICAL LIMITED et al.		

<p>1. This report is the International preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 1 sheets, as follows:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>

Date of submission of the demand 06.04.2005	Date of completion of this report 14.06.2005
Name and mailing address of the international preliminary examining authority:   European Patent Office - Gitschner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Authorized Officer  Völlinger, M Telephone No. +49 30 25901-597



# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/GB2004/003324

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - International preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements\* of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

### Description, Pages

1-38 as originally filed

### Claims, Numbers

41-49 as originally filed  
40 filed with the demand

### Drawings, Sheets

1/13-13/13 as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
- 3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos. 1-39
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
- 4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superceded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/003324

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	40-49
	No:	Claims	
Inventive step (IS)	Yes:	Claims	40-49
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	40-49
	No:	Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.  
**PCT/GB2004/003324**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1 Reference is made to the following document:  
D5: US 2002/035334 A1 (MEIJ SIMON H ET AL) 21 March 2002 (2002-03-21)
- 2 The document D5 is regarded as being the closest prior art to the subject-matter of claim 40, and shows (the references in parentheses applying to this document):

A method for obtaining a set of electrocardiographic (ECG) signals (FIG. 6) by:

  - receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals (FIG. 3, paragraph 27);
  - synthesising at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a synthesised set of ECG signals, each synthesised signal corresponding to a location on the body (508 in FIG. 6);
  - detecting the body's posture (504 in FIG. 6); and
  - selecting or modifying the transformations used in said synthesising step on the basis of the detected body posture, so as to reduce posture-induced inaccuracies between each synthesised signal and a real signal that would be measured at the synthesised location in a reference body posture (paragraph 63).

2.1 The subject-matter of claim 40 differs from this known method in that the transformations used in said synthesising step is selected or modified on the basis of the detected body posture, so as to reduce posture-induced inaccuracies between each synthesised signal and a real signal that would be measured at the synthesised location in the detected body posture.

The subject-matter of claim 40 is therefore new (Article 33(2) PCT).

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/GB2004/003324

- 2.2 The problem to be solved by the present invention may be regarded as to improve the accuracy of the synthesis of ECG signals.
- 2.3 The solution to this problem proposed in claim 40 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
- Neither document D5 nor any of the other documents cited in the international search report suggests the provision of a ECG synthesis transformation specific for the current body posture of the patient which provides better accuracy between a synthesised ECG signal and a real ECG signal that would be measured at the synthesised locations in the current body posture of the patient. Document D5 does teach the detection of the current patient body posture and a provision of a synthesis transformation which is specific for the current body posture. However, the synthesis transformation provided by the teaching of D5 is a transformation for calculating a synthesised ECG in a reference body posture and not in the current body posture, i.e., the teaching of D5 addresses a different problem than the present invention. Therefore, starting from the teaching of D5 the skilled person would not be motivated or prompted to modify the teaching of D5 in such a way as to arrive at the subject-matter of the invention defined in claim 40. None of the other documents cited in the international search report refers to the detection of body posture in connection with the synthesis of ECG data.
- 2.4 Claims 41 - 49 are dependent on claim 40 and as such also meet the requirements of the PCT with respect to novelty and inventive step.